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10/595,362	04/12/2006	Akira Kurome	1141/76099	8185

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COOPER & DUNHAM, LLP  
1185 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036

EXAMINER
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VARGAS, DIXOMARA

ART UNIT	PAPER NUMBER
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2859

MAIL DATE	DELIVERY MODE
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09/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/595,362

**Applicant(s)**

KUROME ET AL.

**Examiner**

Dixomara Vargas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 12-14, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 6, 8-11 and 15-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/12/06</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because of the following: The abstract of the current application exceeds the 150 words range. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The Specification of the current application is objected to because it fails to follow the guidelines as suggested below. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR  
DEVELOPMENT.

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(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A  
COMPACT DISC.

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97  
and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence  
Listing" is required on paper if the application discloses a nucleotide or amino  
acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence  
Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the  
basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on  
sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-4, 7, 12 and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohashi et al. (US 5,864,275 A).

With respect to claim 1, Ohashi discloses an MR/apparatus comprising (Figure 3): a pair of static magnetic field generating units being placed facing each other, and for forming a static magnetic field region in the space therebetween (#14); a tabular gradient magnetic field generating unit (#18) being placed on the facing surface of the respective static magnetic field generating units (as see on Figure 3), each via the first support member (Column 10, lines 25-33); and the static magnetic field correcting units being each arranged between the static magnetic field generating unit and the gradient magnetic field generating unit (shims #20 and #21 in plates #16 and #19), for correcting the static magnetic field uniformity (Column 6, lines 16-23), wherein the static magnetic field correcting unit is a tabular shim tray (plates #16 and #19) on which a magnetic piece for correcting the static magnetic field uniformity is placed (elements #20 and #21), and being placed respectively via the second support member on the facing surface of a pair of static magnetic field generating units (fastener #117 on cover #118).

6. With respect to claim 2, Ohashi discloses the shim tray and the gradient magnetic field generating unit independently supported by the static magnetic field generating unit (Figures 3, 4B and 4C).

7. With respect to claim 3, Ohashi discloses the air gap is set between the shim tray and the gradient magnetic field generating unit, and the shim tray and the static magnetic field generating unit (Column 8, lines 30-41, Figure 3).

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8. With respect to claim 4, Ohashi discloses the shim tray includes one or more through-holes, and the first support member is placed in the through-hole (Figure 4B, bolts supporting members #117 and #118 placed in holes at each side).

9. With respect to claim 7, Ohashi discloses the shim tray formed by a non-magnetic material (Columns 7 and 9, lines 49 and 31-35 respectively).

10. With respect to claim 12, Ohashi discloses the first support member includes a magnetic member, for correcting the uniformity of the static magnetic field (Column 7, lines 37-61).

11. With respect to claim 22, Ohashi discloses the first support member includes a magnetic member, for correcting the uniformity of the static magnetic field (Column 7, lines 37-61).

12. With respect to claim 23, Ohashi discloses the first support member includes a magnetic member, for correcting the uniformity of the static magnetic field (Column 7, lines 37-61).

13. With respect to claim 24, Ohashi discloses the first support member includes a magnetic member, for correcting the uniformity of the static magnetic field (Column 7, lines 37-61).

***Claim Rejections - 35 USC § 103***

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. (US 5,864,275 A) in view of Richard et al. (US 5,550,472 A).

With respect to claim 5, Ohashi discloses the shim tray having one or more through-holes to have the first support member inserted (Figure 4B, bolts supporting members #117 and #118 placed in holes at each side). Furthermore, Ohashi discloses the claimed invention as stated above in paragraph 2 except for the shim tray being provided with a plurality of through-holes with predetermined pattern, in which one or more holes of the plurality of through-holes have the magnetic piece inserted. However, Richard discloses the shim tray being provided with a plurality of through-holes with predetermined pattern, in which one or more holes of the plurality of through-holes have the magnetic piece inserted (Abstract, Figures 3 and 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the shim tray being provided with a plurality of through-holes with predetermined pattern, in which one or more holes of the plurality of through-holes have the magnetic piece inserted as taught by Richard, with Ohashi's MRI apparatus for the purpose of producing a more efficient shimming of higher or lower order components by easily adjusting the position of the shimming elements in the tray.

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17. With respect to claim 14, Ohashi discloses the first support member is inserted in the through-hole with a large diameter (Figure 4B, holes cover by fastening bolts supporting the structure #117, and #118). Furthermore, Ohashi discloses the claimed invention as stated above in paragraph 2 except for the a plurality of through-holes of the shim tray have two kinds of diameters that are large and small, in which the magnetic piece is inserted in the through-hole with a small diameter. However, Richard discloses a plurality of through-holes of the shim tray have two kinds of diameters that are large and small, in which the magnetic piece is inserted in the through-hole with a small diameter (Abstract, Figures 3 and 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of through-holes of the shim tray have two kinds of diameters that are large and small, in which the magnetic piece is inserted in the through-hole with a small diameter as taught by Richard with Ohashi's MRI apparatus for the purpose of producing a more efficient shimming of higher or lower order components by easily adjusting the position of the shimming elements in the tray.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. (US 5,864,275 A) in view of Amor et al. (US 5,786,695 A).

With respect to claim 13, Ohashi discloses the claimed invention as stated above in paragraph 2 except for the system wherein the first support member and the shim tray do not touch each other. However, Amor discloses a first support member and the shim tray do not touch each other (Figure 3, support #44 and shim tray #62). Therefore, it would have been



obvious to one of ordinary skill in the art at the time the invention was made to have a first support member and the shim tray not touching each other as taught by Amor with Ohashi's MRI apparatus for the purpose of defining a cooling passage therebetween as taught by Amor (Column 2, lines 19-52).

***Allowable Subject Matter***

19. Claim 21 is allowed.
20. The following is an examiner's statement of reasons for allowance:
  - a. With respect to claim 21, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus including a shim tray with plural layers of structure and at least one layer is formed by a vibration-damping material, and the gradient magnetic field generating unit is mounted on the surface of the shim tray and supported by the shim tray in combination with the remaining limitations of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

21. Claim 6, 8-11 and 15-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter:

b. With respect to claim 6, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a first support member placed in centrosymmetric position corresponding the gradient magnetic field generating unit in combination with the remaining limitations of claim 1 above.

c. With respect to claim 8, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a shim tray formed by a material which is electrically conductive in combination with the remaining limitations of claim 1 above.

d. With respect to claim 9, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a static magnetic field generating unit has a concave portion on the facing surface, and the shim tray and the gradient magnetic field generating unit are placed in the concave portion in combination with the remaining limitations of claim 1 above.

e. With respect to claim 10, the claim has been found allowable due to its dependency on claim 9 above.

f. With respect to claim 11, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a first support member includes a vibration-damping member in combination with the remaining limitations of claim 1 above.

g. With respect to claim 15, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a member for suppressing the vibration amplitude of the gradient magnetic field generating unit is inserted in one or more through-holes out of the plurality of the through-holes of the shim tray which have neither the magnetic piece nor the first support member is placed, and the amplitude suppressing member is an elastic member of which one end is fixed to the static magnetic field generating unit and the other end contacts the gradient magnetic field generating unit in combination with the remaining limitations of claims 1 and 5 above.

h. With respect to claim 16, the claim has been found allowable due to its dependency on claim 15 above.

i. With respect to claim 17, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a vibration-damping material is filled in one or more through-holes out of the plurality of through-holes of the shim tray in which neither the magnetic piece nor the support member is placed in combination with the remaining limitations of claims 1 and 5 above.

j. With respect to claim 18, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a first support member comprises the first holding part and the second holding part placed with the vibration-damping member therebetween, and that the first holding part is fixed to the static magnetic field generating unit and the second holding

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part is fixed to the gradient magnetic field generating unit in combination with the remaining limitations of claim 1 above.

k. With respect to claim 19, the claim has been found allowable due to its dependency on claim 18 above.

l. With respect to claim 20, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a magnetic piece formed with a material that is the vibration-damping member being combined with a magnetic substance in combination with the remaining limitations of claim 1 above.

### ***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional prior art cited in the PTO 892 discloses MR systems with shim trays or shim plates to adjust the static magnetic field.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252. The examiner can normally be reached on Monday to Thursday from 8:00 am. to 4:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dixomara Vargas  
Patent Examiner  
Art Unit 2859